Montana Department of
Environmental Quality

Watershed Management Update

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This newsletter is published by the Montana Department of Environmental Quality (DEQ) in an effort to share information with local watershed planning groups. Local groups are encouraged to share their success stories with others working in Montana to improve and protect water quality. To publish an article in the newsletter contact Carole Mackin at (406) 444-7425.

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History of the Blackfoot

Highway 200 along the Blackfoot River follows a truly ancient trail. People have been traveling this route for at least 10,000 years. More recently (July 1805), Captain Meriwether Lewis and his Indian guides parted company near Hellgate at the mouth of the Blackfoot. They assured Lewis that even a white man could follow the well-worn trail.

The Nez Pierce called the river “Cokalahishkit” (River of the Road to the Buffalo) and they traveled it mainly in the fall. Prime buffalo hides and meat were the only reason to risk running into the fierce Blackfeet and Hidatsa. But, fall meant these tribes would also be hunting out on the plains.

It was probably the gold miners in the late 1800s who named the river, Blackfoot. The miners also vied with hostile warriors to stake a claim to their diggings. After 100 years the land and water still show the effects of the

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miner's toil. Several mining districts are easily spotted in the Lincoln area. Their legacy includes tailings, waste rock dumps and acid mine drainage from old adits.

The Blackfoot Challenge

The Department of Environmental Quality (DEQ), in cooperation with the Blackfoot Challenge, completed a water quality and habitat restoration plan for the Blackfoot Headwaters TMDL Planning Area. The plan consists of two documents: one addresses metals contamination and the other, sediment. These documents identify an approach to improve water quality and habitat conditions so that all beneficial uses of the water are restored and protected.

The mission of Blackfoot Challenge, a grass roots watershed group, is to coordinate efforts to enhance, conserve, and protect the natural resources and rural character of the Blackfoot River Valley. The Blackfoot Challenge ensured that the following habitat concerns and watershed priorities were addressed: noxious weed management, fish passage mitigation, and the links between sediment impairments and fish habitat limitations. The plan contains a total maximum daily load (TMDL) for sediment and metals, as well as a general plan to improve and maintain water quality throughout the basin.

The Blackfoot Challenge assisted the DEQ with public involvement. They will also facilitate participation of the public and other stakeholders as the Blackfoot Headwaters Water Quality and Habitat Restoration Plan is implemented.

The Blackfoot Headwaters Planning Area

The Blackfoot Headwaters Planning Area includes 318,000 acres from the river's headwaters to the confluence of the river and Nevada Creek. All surface waters in the planning area have a B-1 water quality classification. B-1 means the water is suitable for a cold water fishery as well as for household, irrigation, livestock, wildlife, industrial, and recreation use.

The sediment impairing the streams of the planning area comes from road runoff, sanding for traffic safety, and eroding stream banks and upland areas. The metals impairing the streams come primarily from mining.

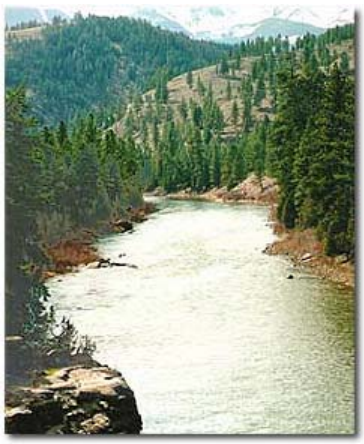
Targets

The TMDL targets for metals are the Montana numeric water quality standards. The TMDL targets for sediment vary according to the current conditions, water quality and habitat restoration goals for each impaired segment. Additional targets were set for restoring degraded habitat and removing barriers to fish migration. Other targets address biological communities and fine sediment in the stream bed. Stream-specific targets cover establishment of riparian cover and channel width-depth ratios.

A typical sediment TMDL is a 30% reduction in the sediment load from roads and a 75% reduction from bank erosion caused by human activity. For road sanding, appropriate best management practices (BMP) are suggested to reduce sediment loading. Land use indicators are compared to determine if activities are increasing water yield and hillslope erosion. The allocations consider seasonal variation and a margin of safety.

Implementation

Implementation strategies are basin-wide or site specific. Examples of basin-wide strategies are: improving roads, using appropriate road and grazing BMPs, managing noxious weeds, adopting buffer zones to protect riparian areas and allow for natural channel migration; and removing fish passage barriers. Examples of site-specific restoration strategies include replacing undersized culverts that affect fish migration and limit sediment transport, using riparian grazing BMPs, restoring placer mined reaches, and mitigating impacts when the road is too close to the stream. ■



Blackfoot River

The Swan Flies

The Environmental Protection Agency approved the water quality protection plan for the Swan Lake Watershed on August 31, 2004. The Swan Lake Watershed is found in Lake and Missoula counties north of Missoula and east of the Mission Mountains.

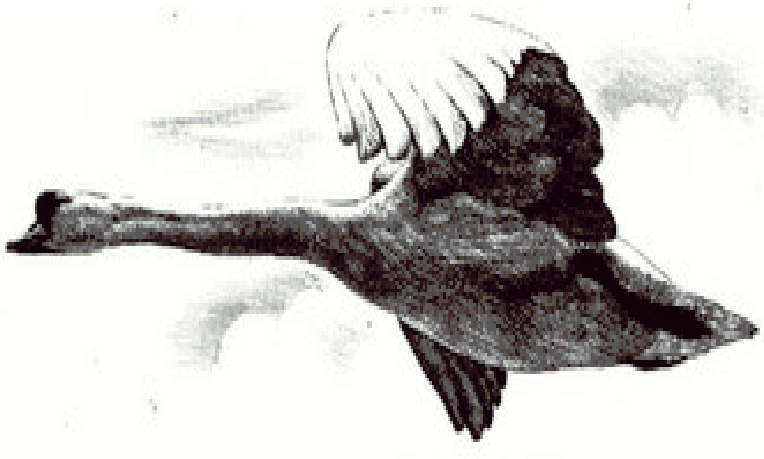
The plan includes Total Maximum Daily Loads (TMDLs) for nutrient loading to Swan Lake and sediment loading to two tributaries to the Swan River. The tributaries are Goat and Jim creeks. A TMDL is the total amount of a pollutant that a water body may receive from all sources without exceeding water quality standards.

The impacts from excess nutrient loading and low levels of dissolved oxygen in the bottom waters is the main concern in Swan Lake. The issue in Jim Creek is fine sediment and its affect on the ability of fish to spawn successfully. Also, Jim Creek lacks enough large woody debris for optimum fish habitat. The issue in Goat Creek is high levels of suspended sediment. The activities causing the problems are timber harvest, private lakeside development, associated roads and septic systems.

The Goat Creek TMDL is a 33% reduction in suspended sediment during peak runoff. The Jim Creek TMDL is a 10% reduction in fine sediment in gravels where fish spawn. The Swan Lake TMDL calls for no increase in particulate organic carbon and nutrients. These substances have a direct effect on oxygen levels in the lower levels of the lake and can eventually affect overall water quality in the lake.

The plan includes a strategy for meeting these reduction goals and protecting water quality throughout the watershed. Implementation relies on local involvement and assistance to help make water quality protection a reality in the Swan Lake Watershed.

Visit our website at http://www.deq.state.mt.us/wqinfo/TMDL/ to learn the details on this and other TMDL planning area documents. ■



Critical Lands Project

The Critical Lands Project is partially funded with the Clean Water Act 319 Nonpoint Source funds. It focuses on the Flathead Valley north of Flathead Lake. According to research scientists at the University of Montana's Flathead Lake Biological Station, water quality in Flathead Lake has declined by about 30% over the past 25 years due to increases in nutrients from nonpoint sources. Rapid growth and development threaten water quality in the lake and its tributaries. Identifying and protecting large critical areas in the six million acre watershed is the most cost-effective way to protect water quality.

The Critical Lands Project is a collaborative, local watershed effort to identify and protect or restore lands critical to the quality of Flathead Lake and its tributaries. The Critical Lands Project will expand wetland and riparian conservation and restoration projects.

These successful projects will become the foundation of an outreach program to inform the public about water quality protection practices, protection and restoration techniques, sources of funding, and technical assistance. Long-term strategies that build public awareness and knowledge about the importance of critical lands and ways to protect and restore them are important to help local residents make land use management and policy decisions that protect water quality.

The project will focus on the impacts of urban land uses, population growth, and development in unincorporated areas. The activities will address farmers and other landowners along the lake shore and stream banks, science teachers and students, people recreating on the water, local government officials, and the general public.

The Critical Lands Project is a partnership of government agencies, research institutions and conservation organizations that cooperate to effectively achieve conservation goals and assist existing programs in delivering their services. Participants include:

- American Bird Conservancy
- Audubon Society, Flathead Chapter
- Montana Land Reliance
- Montana Nature Conservancy
- Montana Audubon
- Montana Wetlands Legacy
- Citizens for a Better Flathead
- The Montana Watercourse
- Confederated Salish & Kootenai Tribes
- NPS Rivers, Trails & Conservation Assistance Program
- Flathead Basin Commission
- Flathead Conservation District
- Natural Resources Conservation Service in Lake & Flathead counties
- Flathead City County Health Dept.
- Flathead Land Trust
- Trout Unlimited, Flathead Valley Chapter
- Lake County Land Services
- US Fish & Wildlife Service
- Land & Water Consulting, Inc.
- UM Flathead Lake Biological Station
- Montana Dept. of Fish, Wildlife & Parks
- District 5 VoAg High School

Critical Lands Project - *continued from page 4*

Project activities include the following tasks:

Evaluate, plan and implement land conservation projects. The Flathead Lakers will support land conservation efforts in the Flathead Watershed. They will help the Flathead Land Trust complete the Glaciated Valleys of Northwest Montana conservation project, evaluate effective land conservation strategies to help identify new conservation projects in the Flathead Watershed, and conduct outreach to landowners to promote land conservation.

Select critical areas for the Ashley Creek and Stillwater River watersheds. Compile additional information on the Ashley Creek and Stillwater watersheds with a focus on identifying critical areas that help protect water quality, provide wildlife habitat, recreation opportunities, open space and scenery. Use this and existing information about pollution sources and nutrient reduction strategies to identify priority critical areas for protection.

Develop a strategic outreach and communication plan. Develop a strategic outreach and communication plan to reach target audiences to build support for conservation and stewardship and protecting critical lands.

Inform the public about the importance of critical areas and promote protection of vegetated riparian areas and floodplains along streams, rivers and wetlands. Promote the use of financial incentives to encourage landowners to participate in protecting water quality; distribute information via newsletter, web site, maps and the media; and conduct two public presentations.

Demonstrate techniques for restoring and revegetating stream banks. Use new and completed projects as examples to demonstrate restoration techniques to landowners in the Ashley Creek, Stillwater River, and Flathead River watersheds. Conduct a tour of restoration projects and promote student projects. ■

Weaver Slough part of the Flathead Critical Lands

Water Quality Restoration in the Beaverhead

The Beaverhead River is a blue ribbon trout stream in southwestern Montana. The Beaverhead Watershed Committee will address impaired streams, threatened fisheries, and point and nonpoint sources of pollution in a Beaverhead Watershed Water Quality Restoration Plan.

The Committee began the project in 2001, using Clean Water Act 319 funding. The committee finished restoration work on Stone Creek, a fishery of genetically pure west slope cutthroat trout. It also set up a monitoring plan for the Beaverhead Watershed. In 2003, it completed an aerial assessment of the entire watershed.

The Beaverhead Watershed Committee and the Beaverhead Conservation District are in a great position to work effectively with the landowners and recreationists in the watershed. They can educate watershed users on best management practices (BMPs).

This proposal will implement the monitoring plan to determine what is polluting the water, develop targets and recommend voluntary BMPs. The project will prepare restoration and conservation plans for three or more streams where there are landowners willing to cooperate and voluntary restoration actions are likely to achieve water quality goals.

Landowners, agencies, local governments, and citizen groups are enthusiastic about tackling the issues found in the Beaverhead watershed. An outreach letter, sent to 250 key landowners, described the purpose, goals, and make up of the Beaverhead Watershed Committee, and invited participation. A public barbeque allowed members of the community to learn about the project from the technical advisors and committee members. ■

Winter grazing on the Matador Ranch

Dupuyer Creek Restoration Projects

Dupuyer Creek flows out of the Rocky Mountains in Pondera County northwest of Great Falls. Twenty percent of the watershed is managed by the Forest Service and eighty percent is private land. The water in Dupuyer Creek is used for irrigation, stock water and recreational fishing.

A major flood in 1964 significantly changed the channel in many parts of Dupuyer Creek. Since then, natural processes are reshaping the channel and floodplain. In 2002, peak spring flows deeply eroded vulnerable creek banks threatening agricultural land and structures. These unstable banks generate large sediment loads and threaten to unravel otherwise stable areas of the stream.

The Pondera County Conservation District and the Dupuyer Creek Watershed Council joined with state and federal agencies to secure a 319 grant in 2002 and again in 2004. The latest grant funds water quality monitoring in Dupuyer Creek, restoration of degraded channel and riparian areas, and protection for stable creek banks.

Riparian vegetation lowers water temperature in the creek by shading the water and reducing the width to depth ratio of the channel. Riparian vegetation deepens the channel by filling in and building up the banks creating a narrow channel for the water. Healthy riparian vegetation stabilizes creek banks and reduces the sediment load to the creek.

The project will restore nearly 1,000 feet of a severely eroding bank of fine sediments. The bank dumps as much as 1,500 tons of sediment into the creek. In another area, woody vegetation will grow to shade 1,700 feet of channel presently exposed to full sunlight.

Forty-five landowners and other interested parties came to an initial planning meeting on November 4, 2002. As a result, the Dupuyer Creek Watershed Council was formed to address water quality/quantity issues and to implement water-quality protection and restoration. Local landowners are voluntarily adopting BMPs to improve the water quality. Tours will demonstrate construction of the BMPs and their effectiveness after they are in place. In addition, the council will present the results of the water quality monitoring. ■

Eroding banks along Dupuyer Creek

The Alluvial Valleys of Stillwater County

Phase I of the Yellowstone River Valley Project in Stillwater County will generate detailed maps of aquifer characteristics. It will also evaluate the potential impacts to ground water and surface water from nonpoint source pollution. This project is a cooperative effort of the Stillwater Conservation District and the Montana Bureau of Mines and Geology (MBMG).

Monitoring and Inventory

Data gaps will become apparent when Yellowstone River Valley Project data is compiled onto maps. The inventory and monitoring plan will focus on filling the gaps. The inventory will include about 150 wells, streams, and springs that will be monitored four to six times a year to determine seasonal variation.

Ground Water and Surface Water Interaction

The MBMG will describe the hydrologic relationships between the aquifers and the interaction of ground water and surface water. Aquifer recharge areas will be given special attention along with groundwater discharge areas that provide baseflow of the streams.

Aquifer Sensitivity

The study will determine the age of the water in bedrock and alluvial aquifers between Reed Point and Park City. The younger the water the more vulnerable it is to pollution.

Nutrients in Ground and Surface Water

The project includes an investigation of the sources of nutrients in the ground water. The MBMG will attempt to show how irrigation and baseflow conditions affect nutrient concentrations. Samples will come from the Yellowstone River, the Stillwater River, Keyser Creek, and Valley Creek.

Public Information

MBMG and the conservation district will inform area residents of their findings in a series of public meetings. The public will be able to review MBMG's maps and recommendations at the Stillwater Conservation District Office. ■

Stillwater Valley

Dr. Christine Brick

Welcome to the newest member of the Statewide TMDL Advisory Group: Dr. Christine Brick. Chris is adjunct faculty at the University of Montana. She also serves as staff for the Clark Fork Coalition and represents the coalition on the Statewide TMDL Advisory Group. The Clark Fork Coalition is a non-profit organization based in Missoula, Montana, working to protect and restore the Clark Fork River watershed. ■

Thousands float on the Clark Fork River to support dam removal and clean water – July 19, 2003.

Qualified List of Environmental Service Providers

DEQ is offering a third way to find a qualified contractor. The approved environmental service providers are available to state and local governmental agencies without going through a competitive bidding process. This option can save time and trouble.

This means agencies now have three options for awarding projects:

Option 1 is selecting a contractor from the list who is qualified to do the work and directly negotiating a mutually acceptable project.

Option 2 is selecting multiple firms who provide a scope of work and an estimate of cost. This option is not a formal competition.

Option 3 is to ignore the list and put the project out to competitive bid.

Agencies contacting a contractor should let them know if funding for the project has been secured. If funding is pending, the contractor must have the option to decline the project without jeopardizing selection on future projects. The agency has the right to cancel the project if funding is not secured. The agency should keep good, written documentation of the negotiation process.

For basic environmental protection, the approved contractor agrees to:

- keep the premises free from debris and accumulation of waste;
- clean up any oil or fuel spills;
- keep machinery clean and free of weeds;
- remove all construction equipment, tools and excess materials; and
- perform finishing site preparation to limit the spread of noxious weeds before final payment. ■

Montana Irrigator's Pocket Guide

The National Center for Appropriate Technology (NCAT) has completed a Nonpoint Source Pollution project titled: A Watershed Approach to Better Irrigation Management. The project revised and reprinted 7,500 copies of The Montana Irrigator's Pocket Guide. The guide covers irrigation water management and equipment maintenance. Guides are available from NCAT by calling 1-800-346-9140.

Paul Brown Probe:
A simple device to test soil moisture

The goal of the project is to reduce water quality problems by promoting good irrigation practices in Montana. NCAT and irrigation specialists ensured that the advice was sound. They added information on energy conservation, gated pipe, drip irrigation, variable-speed pumps, solar and wind energy applications, soil moisture monitoring, and AgriMet weather stations.

The Department of Environmental Quality sponsored the project along with NorthWestern Energy, the Montana Water Center and the ATTRA Project of the USDA Rural Business-Cooperative Service. Water specialists from Montana State University, Montana Department of Natural Resources and Conservation, USDA Natural Resources Conservation Service, U.S. Bureau of Reclamation, M.K. Hansen Company, Gallatin Valley Irrigation, and Montana Fish, Wildlife, and Parks provided technical assistance.

The user-friendly guide is such a hit that NCAT is preparing a national version. Already 30 states have provided input. Publication is expected in the spring of 2005. ■

Your Comments Requested

on the Water Quality Assessment and TMDL for the Flathead Headwaters Planning Area

The Montana Department of Environmental Quality and United States Environmental Protection Agency have released a draft water quality protection plan for the Flathead River Headwaters TMDL Planning Area. The document addresses twelve water bodies and includes a Total Maximum Daily Load (TMDL) for sediment in the Coal Creek Watershed where the Bull Trout population has declined. A TMDL is the total amount of a pollutant that a water body may receive from all sources without exceeding water quality standards. The Flathead River Headwaters is found in Flathead County near Kalispell, Montana.

The DEQ invites the public to attend an open house on Monday, November 8, 2004 in the "Large Conference Room" at the Montana Department of Fish, Wildlife and Parks, offices at 490 North Meridian, Kalispell, Montana.

Open house hours are from 3:00 to 8:00 p.m. A short presentation will start at 6:00 p.m. Members of the public may stop by during the open house to speak with a water quality specialist about their questions and comments.

The draft document is available for review on the DEQ web site: http://www.deq.state.mt.us/index.asp.

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Your Comments Requested - *continued from page 10*

Public comments will be accepted until 5 p.m., November 20, 2004. The comments may be mailed to: Montana Department of Environmental Quality, P. O. Box 200901, Helena, Montana 59620-0901 or emailed to: TMDLComments@state.mt.us.

For more information, please contact:
Ron Steg, EPA, (406) 457-5024, steg.ron@epa.gov
or
Robert Ray
DEQ Watershed Program Manager
(406) 444-5319, rray@state.mt.us

Upcoming Events

November 17 - 18 — MACD Annual Convention, Kalispell. mail@macdnet.org, for additional information.

November 5 – Montana Natural Resources Professionals Annual Meeting & Party, Lindley Center, Bozeman. For information, see http://water.montana.edu/resources/events/detail.asp?iEve=1019&iType=937

November 7 to 10 – Montana Farm Bureau Annual Conference, Bozeman. For information, call 582-4109.

November 8 – DEQ open house on the draft water quality protection plan for the Flathead River Headwaters TMDL Planning Area, 3-8 p.m., Montana Department of Fish, Wildlife & Parks conference room, 490 North Meridian, Kalispell. http://www.deq.state.mt.us/index.asp

November 20 – Last day for public comments on the Flathead River Headwaters TMDL Plan. Comments may be mailed to the DEQ at P.O. Box 200901, Helena, MT 59620-0901 or e-mailed to TMDLComments@state.mt.us before 5:00 pm.

November 30 – Monitoring Work Group of the Montana Watershed Coordinating Council, Room 111 Director's Conference Room, DEQ, 1520 East Sixth Ave., Helena. 9:30 a.m. to 2:30 p.m. http://water.montana.edu/watersheds/mwcc/workgroups/wkgroup_details.asp?wkgroupID=22

February 1 - 2 – Erosion and Sediment Annual Technical Conference, Soil and Water Conservation Society. Holiday Inn, Bozeman.

April 1 - 2 – 2005 Clark Fork Symposium, University of Montana, Missoula.